

APPLICATION

FOR UNITED STATES LETTERS PATENT

SPECIFICATION

TO ALL WHOM IT MAY CONCERN:

BE IT KNOWN THAT WE, **Michael T. Christen**, a citizen of the United States,
and **Mark C. Christen**, a citizen of the United States, have invented a new and useful
underdeck pontoon lift system of which the following is a specification:

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2
3 **Underdeck Pontoon Lift System**
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5

6 **CROSS REFERENCE TO RELATED APPLICATIONS**
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8 Not applicable to this application.
9
10
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12 **STATEMENT REGARDING FEDERALLY**
13 **SPONSORED RESEARCH OR DEVELOPMENT**
14

15 Not applicable to this application.
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17

18 **BACKGROUND OF THE INVENTION**
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20
21

22 **Field of the Invention**
23

24 The present invention relates generally to pontoon lifts and more specifically it
25 relates to an underdeck pontoon lift system for supporting pontoons of various sizes in a
26 stable manner.
27

28
29 **Description of the Related Art**
30

31 Pontoon lifts have been in use for years. Many pontoon lifts utilize a cantilever
32 structure for lifting a pontoon above a water surface. There are also vertical lifts that

1 are capable of elevating a pontoon. Pontoon lifts may either engage the underdeck or
2 the floats for elevating the pontoon.

3
4 One of the problems with underdeck pontoon lifts is that they are not suitable
5 for the newer pontoons that have larger diameter floats (e.g. 25 or 27 inches).
6 Conventional underdeck pontoon lifts have a support bed that is typically 48 inches
7 wide which may engage and damage the interior surfaces of the floats. In addition,
8 conventional support beds for pontoon lifts merely have a straight structure and do not
9 provide a tapered loading area to assist in guiding the pontoon upon the support bed.

10
11 While these devices may be suitable for the particular purpose to which they
12 address, they are not as suitable for supporting pontoons of various sizes in a stable
13 manner. Conventional pontoon lifts are not suitable for supporting newer pontoons that
14 have larger diameter floats.

15
16 In these respects, the underdeck pontoon lift system according to the present
17 invention substantially departs from the conventional concepts and designs of the prior
18 art, and in so doing provides an apparatus primarily developed for the purpose of
19 supporting pontoons of various sizes in a stable manner.

1

2 **BRIEF SUMMARY OF THE INVENTION**

3

4 In view of the foregoing disadvantages inherent in the known types of pontoon
5 lifts now present in the prior art, the present invention provides a new underdeck
6 pontoon lift system construction wherein the same can be utilized for supporting
7 pontoons of various sizes in a stable manner.

8

9 The general purpose of the present invention, which will be described
10 subsequently in greater detail, is to provide a new underdeck pontoon lift system that
11 has many of the advantages of the pontoon lifts mentioned heretofore and many novel
12 features that result in a new underdeck pontoon lift system which is not anticipated,
13 rendered obvious, suggested, or even implied by any of the prior art pontoon lifts,
14 either alone or in any combination thereof.

15

16 To attain this, the present invention generally comprises a base structure, a
17 plurality of front lifting jacks and a rear lifting jack pivotally attached to the base
18 structure, a support bed pivotally attached to the lifting jacks, a front structure
19 extending from the base structure, and an elevating unit for manipulating the lifting
20 jacks. The lifting jacks preferably have an inverted U-shaped base member with a pair
21 of support members extending upwardly, where the width of the support members is
22 less than the width of the base member. The lifting jacks are preferably attached to
23 cross members that extend between side members of the base structure. The support
24 bed preferably has a rear tapered portion for assisting in the loading of a pontoon.

25

26 There has thus been outlined, rather broadly, the more important features of the
27 invention in order that the detailed description thereof may be better understood, and
28 in order that the present contribution to the art may be better appreciated. There are
29 additional features of the invention that will be described hereinafter and that will form

1 the subject matter of the claims appended hereto.

2
3 In this respect, before explaining at least one embodiment of the invention in
4 detail, it is to be understood that the invention is not limited in its application to the
5 details of construction and to the arrangements of the components set forth in the
6 following description or illustrated in the drawings. The invention is capable of other
7 embodiments and of being practiced and carried out in various ways. Also, it is to be
8 understood that the phraseology and terminology employed herein are for the purpose
9 of the description and should not be regarded as limiting.

10
11 A primary object of the present invention is to provide an underdeck pontoon
12 lift system that will overcome the shortcomings of the prior art devices.

13
14 A second object is to provide an underdeck pontoon lift system for supporting
15 pontoons of various sizes in a stable manner.

16
17 Another object is to provide an underdeck pontoon lift system that is capable of
18 supporting pontoons with floats having larger diameters (e.g. 25", 27").

19
20 An additional object is to provide an underdeck pontoon lift system that reduces
21 wear and damage to floats.

22
23 A further object is to provide an underdeck pontoon lift system that provides a
24 stable base.

25
26 Another object is to provide an underdeck pontoon lift system that provides a
27 tapered front loading area to assist in loading of a pontoon.

1 Other objects and advantages of the present invention will become obvious to the
2 reader and it is intended that these objects and advantages are within the scope of the
3 present invention.

4
5 To the accomplishment of the above and related objects, this invention may be
6 embodied in the form illustrated in the accompanying drawings, attention being called
7 to the fact, however, that the drawings are illustrative only, and that changes may be
8 made in the specific construction illustrated and described within the scope of the
9 appended claims.

1
2 **BRIEF DESCRIPTION OF THE DRAWINGS**
3

4 Various other objects, features and attendant advantages of the present
5 invention will become fully appreciated as the same becomes better understood when
6 considered in conjunction with the accompanying drawings, in which like reference
7 characters designate the same or similar parts throughout the several views, and
8 wherein:
9

10 FIG. 1 is an upper perspective view of the present invention.
11

12 FIG. 2 is a side view of the present invention.
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14 FIG. 3 is a top view of the present invention.
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16 FIG. 4 is a rear view of the present invention.
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18 FIG. 5 is a rear view of the present invention supporting a pontoon.
19

20 FIG. 6 is a side view of the present invention supporting a pontoon.
21

22 FIG. 7 is a rear view of the front lifting jack.
23

24 FIG. 8 is a rear view of the rear lifting jack.

DETAILED DESCRIPTION OF THE INVENTION

A. Overview

Turning now descriptively to the drawings, in which similar reference characters denote similar elements throughout the several views, FIGS. 1 through 8 illustrate an underdeck pontoon lift system 10, which comprises a base structure 20, a plurality of front lifting jacks 30 and a rear lifting jack 40 pivotally attached to the base structure 20, a support bed 50 pivotally attached to the lifting jacks, a front structure 60 extending from the base structure 20, and an elevating unit 70 for manipulating the lifting jacks. The lifting jacks 30, 40 preferably have an inverted U-shaped base member 32 with a pair of support members 34 extending upwardly, where the width of the support members 34 is less than the width of the base member 32. The lifting jacks 30, 40 are preferably attached to cross members that extend between side members 22 of the base structure 20. The support bed 50 preferably has a rear tapered portion 56 for assisting in the loading of a pontoon 12.

B. Base Structure

The base structure 20 preferably has an elongated rectangular structure as shown in Figure 3 of the drawings. The base preferably has a plurality of cross members 24, 26, 28 extending between a pair of side members 22 that the lifting jacks 30, 40 are pivotally attached to as best shown in Figure 1 of the drawings. The base has a width greater than the lifting jacks 30, 40 and the support bed 50 as best illustrated in Figure 4 of the drawings.

The base structure 20 may include a plurality of leveling legs 23 for allowing the user to level the lift system 10. The base structure 20 may also include wheels for assisting in the entry and removal of the lift system 10 from the water. Various other

1 structures may be added to the base structure **20** that are commonly utilized in the lift
2 industry.

3 4 **C. Lifting Jacks**

5 The plurality of lifting jacks **30, 40** are preferably comprised of a plurality of
6 front lifting jacks **30** and at least one rear lifting jack **40** as shown in Figure 1 of the
7 drawings. The lifting jacks **30, 40** each are preferably comprised of an inverted U-
8 shaped base member **32** and a pair of support members **34** extending upwardly from
9 the base member **32** as shown in Figures 7 and 8 of the drawings.

10
11 A third width of the support members **34** is preferably at least 30 percent less
12 than a fourth width of the base member **32**. The third width is preferably between 31
13 inches to 36 inches and the fourth width is preferably approximately 49.5 inches. The
14 applicant has found that these dimensions are desired for supporting pontoons with
15 various sizes of floats **14**.

16
17 The lifting jacks **30, 40** preferably include at least one support cross member **36**
18 extending between the support members **34** as further shown in Figures 7 and 8 of the
19 drawings. The rear lifting jack **40** preferably includes a pair of angled members **42**
20 extending between the support cross member **36** and the support members **34** as shown
21 in Figure 8 of the drawings.

22
23 The lifting jacks **30, 40** are pivotally attached to corresponding cross members
24 **24, 26, 28** that extend between a pair of side members **22** of the base structure **20** as
25 shown in Figure 1 of the drawings. The front lifting jacks **30** are pivotally attached to
26 bed cross members **54** that extend between a pair of rails **58** of the support bed **50** as
27 further shown in Figure 1 of the drawings. The rear lifting jack **40** is preferably
28 pivotally attached to the rails **58** of the support bed **50** thereby eliminating the need for
29 a cross member in the rear portion of the support bed **50**.

1
2 **D. Support Bed**

3 The support bed **50** is pivotally attached to the upper end of the lifting jacks
4 opposite of the base structure **20** in a cantilever manner. The support bed **50** has a pair
5 of rails **58** with a plurality of bed cross members **54** extending between thereof. One
6 or more stop members **52** may extend upwardly from a front portion of the support bed
7 **50** for limiting the movement of the pontoon **12** upon the support bed **50**. The support
8 bed **50** preferably includes a rear tapered portion **56** that tapers inwardly for assisting
9 in loading of a pontoon **12** as best shown in Figures 1 and 3 of the drawings.
10

11 The support bed **50** preferably has a first width that is at least 20 percent less
12 than a second width of the base structure **20**. The first width is preferably
13 approximately 43 inches which the applicant has discovered is desired for fitting
14 between floats **14** of various sizes, including larger sized floats **14** (e.g. 25 inches, 27
15 inches). The second width of the base structure **20** is preferably approximately 60
16 inches which provides the desired support for the lift system **10** while providing a
17 narrow support bed **50**.
18

19 **E. Front Structure**

20 The front structure **60** extends upwardly from the base structure **20** as shown in
21 Figures 1 and 2 of the drawings. The front structure **60** includes a pair of front support
22 members **62 34** attached to a supporting cross member **29** of said base structure **20** as
23 further shown in Figure 1 of the drawings. The front support members **62 34**
24 preferably have a width less than the base structure **20** as shown in Figure 3 of the
25 drawings.
26

27 **F. Elevating Unit**

28 The elevating unit **70** is attached to the front structure **60** for manipulating the
29 lifting jacks from a lowered position to a raised position. The elevating unit **70** may be

1 manually operated (e.g. wheel) or motorized. As is well known in the art of lifts, a
2 cable may extend from the elevating unit 70 and through a series of pulleys attached to
3 the front structure 60 and the front lifting jack and/or support bed 50. The end of the
4 cable is preferably attached to the front structure 60 as shown in Figures 1 and 3 of the
5 drawings.

6
7 The operation of the elevating unit 70 within the present invention is similar to
8 conventional lift units. When the cable of the elevating unit 70 is extended out, the
9 lifting jacks 30, 40 then pivot rearwardly together thereby lowering the support bed 50
10 and the pontoon 12. When the cable of the elevating unit 70 is drawn in, the lifting
11 jacks 30, 40 then pivot forwardly together thereby raising the support bed 50 and the
12 pontoon 12.

13
14 What has been described and illustrated herein is a preferred embodiment of the
15 invention along with some of its variations. The terms, descriptions and figures used
16 herein are set forth by way of illustration only and are not meant as limitations. Those
17 skilled in the art will recognize that many variations are possible within the spirit and
18 scope of the invention, which is intended to be defined by the following claims (and
19 their equivalents) in which all terms are meant in their broadest reasonable sense
20 unless otherwise indicated. Any headings utilized within the description are for
21 convenience only and have no legal or limiting effect.